

CLAIMS

1. An apparatus for reflecting at least one stereoscopic observation beam path out of a main observation beam path of a microscope, for example a surgical

5 stereomicroscope, having a main microscope (1) and an assistant's microscope (8), having a zoom (6) whose axis is arranged at an angle to the optical axis (4) of a main objective (2), and having a beam splitter (7) for reflecting out stereoscopic assistant's observation beam paths (9a, b),

10 wherein the beam splitter (7) is arranged between the main objective (2) and the zoom (6), and is continuously rotatable, together with the assistant's microscope (8), about the optical axis (4) of the main objective (2), and is thus optically usable in any rotational position.

15 2. The apparatus according to Claim 1, wherein the zoom (6) encompasses at least one optionally multi-part optical system in each of the stereoscopic partial beam paths.

20 3. The apparatus according to any of the preceding claims, wherein the optical systems of the zoom (7) [sic] lie substantially perpendicular to the optical axis (4) of the main objective (2).

25 4. The apparatus according to any of the preceding claims, wherein the assistant's microscope (8) is detachable and/or removable from the main microscope (1), optionally with the beam splitter (7), at a mechanical detachment point (11).

30 5. The apparatus according to any of the preceding claims, wherein the assistant's microscope (8) contains, in the region between the beam splitter (7) and a deflection element (10), optical components that make possible a spacing variation (15) and/or an image rotation between the beam splitter (7) and the deflection element (10).

6. The apparatus according to any of the preceding claims, wherein the deflection element (10) is embodied rotatably relative to the beam splitter (7) about an axis (14) of the assistant's microscope (8).
- 5 7. The apparatus according to any of the preceding claims, wherein the rotation of the beam splitter (7) together with the assistant's microscope (8) is drivable in motorized or manual fashion.
- 10 8. The apparatus according to any of the preceding claims, wherein the outcoupled assistant's observation beam paths (9a, b) are directed to a deflection element (10) that by way of its arrangement and configuration makes possible a tilt, and therefore a deflection through a variable angle (α), of the assistant's observation beam paths (9a, b).
- 15 9. The apparatus according to any of the preceding claims, wherein the main objective (2) is designed with a fixed or variable focal length.
- 20 10. The apparatus according to any of the preceding claims, wherein an optional illumination beam path (12a) is directed through the main objective (2) used in shared fashion.
- 25 11. The apparatus according to any of the preceding claims, wherein the main objective (2), used in shared fashion, of the main microscope (1) is divided into two or more parts.
12. The apparatus according to Claim 10, wherein one part of the main objective (2) is used for the main observation beam paths (4a, b) of the main microscope (1), and another part of the main objective (2) for the illumination beam path (12a).

13. The apparatus according to any of the preceding claims, wherein the main objective (2) is arranged rotatably, together with the illumination device, about the optical axis (4) of the main objective (2).